

SOME PHASES OF MODERN PHILOSOPHY.

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“I am a brother to dragons, and a companion to owls.” So Job was constrained to say in the hour of his great afflictions: so others now say induced only by speculative philosophy.

The tendency of much of the modern natural and physical philosophy is to degrade our humanity, and to dispense with the belief of a Creator. Delvers in a special field are not content to exhibit what they find for the use of those who are farther advanced and prepared to take a broader survey from a more elevated height; but they theorize and make their inductions from facts too few and inadequate for the conclusions drawn. The result cannot be truth, but error. Theories so built are raised to be quickly thrown down. They are the least fit to survive in the struggles of science.

All carefully observed and true facts philosophy must receive and register for her legitimate uses. But if philosophers be not certain of the truth of facts, and have not all that are requisite for truthful conclusions, they violate the fundamental canon of philosophizing: they necessarily land in error, and bring reproach and ridicule upon philosophers and philosophy. Much labor and expense of printing are wasted, while students are misled, science is obstructed, and it is made necessary for the lovers of truth in the next to correct the errors of this generation.

I. The first subject to which I would now ask your attention is that of Spontaneous Generation. Dr. Erasmus Darwin had, at the close of the last century, ascribed to Nature the power of spontaneous generation; and thus concludes:

“Hence, without parent, by spontaneous birth,
Rise the first specs of animated earth;
From Nature’s womb the plant or insect swims,
And buds or breathes, with microscopic limbs.”

[*The Temple of Nature*].

“Organic life beneath the shoreless waves
Was born, and nurs’d in Ocean’s pearly caves.”—[*Ibid*].

But he had the imagination of the poet; and his imagination sometimes assumed his facts.

There is a present effort to go a step further, and prove that life can be produced by man from matter, without propagation from other life; and if you add to this the theory of evolution, by which all complicated life is derived from first simple forms, we have two theories, which, taken together, will account for all life, without a Creator. There are, however, certain things, like perpetual motion, so contrary to nature, as not to be credible. The fact of spontaneous generation has not yet been satisfac-

torily proved; and, it is believed by those best enabled to form a correct opinion, will never be proved. The life produced by the experimenter is, no doubt, but a process of developing seeds or spores, or of hatching eggs, that exist invisibly in the atmosphere, and within the tube used in the experiment, and from which they had not been perfectly expelled. And well it is that life is not, and cannot be, spontaneous, for, if noxious, and no law of reproduction restrained the increase, there could then be no hope of its effectual extermination; but, if depending upon parental production, when you destroy the parents, you destroy the pestiferous succession. This was the basis of the confidence of Pasteur in his successful researches and efforts to find out and destroy the parasite that destroyed the silk-worms in France.

It is also the hope of mankind to escape contagious diseases, that proceed from germs that ever re-produce the same disease, be it small-pox, scarlet fever, or cholera, or other plague, for the spread of which the corrupted air becomes the fitting propagating medium.

If new generation were possible, there would result confusion; it should be bound by no rule if not produced in the course of nature; there could never then be scientific classification into genera and species, and all order and harmony would become impossible. It is a necessary ordination of the Author of nature that generation should come from a living parentage, and that parents should ever produce their like. Such we know to be nature's procedure. Such process must proceed by law, that the progeny shall be like their parents, and of different sexes, and such law and such sure observance of law, imply an intelligent Creator, who never ceases to watch over his creation. Life has been on the earth in countless forms, and in infinite multitudes, through nearly all the geological formations from water deposition, and ever since; but none of that life has been thought to be spontaneous, except in the imagination of the poet, or of the fanciful theorist. All except the first of each kind, for which we infer a Creator, came by generation, from parental germs and ova, as we must believe from observation; or by fission, which but subdivides life and thereby multiplies it. It is, however, now announced in this age of great discoveries that man can produce life where no life was.

Dr. Bastian has made numerous experiments and written a book on "The Modes of Origin of Lowest Organisms," and believes that he has produced them *de novo*, "independently of pre-existing living matter." But his book makes necessary admissions that must go far, if not quite, to destroy his theory. All the living organisms which he produced had been before known as existing in the course of nature, and had been named. They are called *Bacteria*, *Torulæ*, *Vibrones*, *Leptothrix*. But why were these, and but these, produced, unless they had a parentage through germs containing life? Why not something new? Certainly these were not new creations of life, but something re-produced that had before their given law; and it is easier for the scientific mind to believe that the parental germs had not been removed by the experimenter, than that he had witnessed a new production of life. This view is well con-

firmed by this statement of the author: "*Bacteria, Torulæ*, or other living things which may have been evolved *de novo*, when so evolved, multiply and reproduce just as freely as organisms that have been derived from parents," p. 3. Now what living thing or creature in all nature ever has propagated, or can propagate its kind, except it has inherited that power from a living parent? From the beginning it has been that the grass, or herb, and fruit tree, "whose seed is in itself," has yielded "fruit after his kind;" and the living creatures have "brought forth abundantly after their kind," and only so have they replenished the earth.

Professor Tyndall's article "Dust and Disease," is commended to the student who would learn how all pervading in the air of London are the seeds of life and of disease. (*Fragments of Science*, 277.)—Stating the result of experiments, he says, "The whole of the visible particles floating in the air of London rooms being thus proved to be of organic origin." (p. 279,) "The air of our London rooms is loaded with this organic dust; nor is the country air free from its presence." (p. 285.) And hence, no doubt, the ova were hatched by Dr. Bastian, or the germs made to grow.

Sir William Thomson in his recent address, as President of the British Association, (*Nature*, August 3, 1871,) adds his authority to that of the opponents of spontaneous generation. "Science brings a vast mass of inductive evidence against this hypothesis of spontaneous generation, as you have heard from my predecessor, (Professor Huxley,) in the presidential chair. Careful enough scrutiny has, in every case, up to the present day, discovered life as antecedent to life. Dead matter cannot become living without coming under the influence of matter previously alive. This seems to me as sure a teaching of science as the law of gravitation." * * * "I confess to being deeply impressed by the evidence put before us by Professor Huxley, and I am ready to adopt, as an article of scientific faith, true through all space and all time, that life proceeds from life, and nothing but life." Yet he, so true and wise in this induction, did not close that same address without falling into an egregious blunder, eliciting instant dissent and derisive laughter, followed by the universal condemnation of the scientific press. He too would dispense with a Creator, at least, on this planet, for he made the suggestion that the first life came to our world by a falling Aerolite, though it came fused by heat! But that was only to transfer creation to another planet. This suggestion of course committed the learned President to the extremes of the evolutionary theory, was to say that from such life as could be borne hither by an aerolite all other life on earth has come and been developed upwards to man. Of this theory let us next speak, but first pausing to declare our faith that life came only from God, and by Him alone is ever protected and preserved.

II. The theory of evolution as announced, seems to have been carried to an extravagant extreme. Its agencies are chiefly two: natural selection, and sexual selection. The life that is best fitted to endure will live the longest; and the weakest will soonest perish; and that which man takes best care of and most propagates is most likely to live in perpetuity,

while that which he destroys, because hurtful, is most likely to perish; and this is natural selection, and to a limited extent, it is obvious to all. The sexual selection is that which the male or female makes when mating. The latter influence can have no place in the vegetable kingdom, for in it there is no will to exert selection; and there is very little of it, indeed, below man in the animal kingdom; for what female is there in it, unrestrained by man that finds not her sufficing mate, be she beautiful or plain? Nature is not checked in her purpose of multiplication, when free, for want of masculine co-operation, for it superabounds. The seeds of life are always superabundant. All the fanciful writing upon this subject, the motives for the mating of birds and quadrupeds, by the attractions of symmetry and beauty of plumage or color, seem quite unimportant: where all mate sexual selection effects nothing. The real check to increase comes from want of food, severity of climate, disease, and enemies, which spare not symmetry or beauty, and not from any failure to be selected.

Nothing is more certain, however, than that as far as man exercises a dominion, by the culture of plants and breeding of animals, he does greatly increase some in numbers and quality, and he diminishes others. He practices great partiality. The flowers and fruits, and vegetables and grains that best please and nourish him, he will most cultivate, and destroy all things that most obstruct their growth. The birds, fowls and animals that are most useful and please him best, he also breeds and greatly multiplies, and he destroys their enemies. The cattle on a thousand hills are justly for its use, because they are bred and fed by himself to do his labor and be his food; and his care and skill make it sure that they shall be the best fitted for his purposes. And this is also called natural selection; although it is the result of man's skill exerted upon nature and the laws that govern nature. Its effect is great, but is not unlimited, and is subject to reversal when man ceases to exert his care and skill.

There is truly a law of nature in propagation, that each species, and each pair of individuals shall produce a progeny like themselves. Man selects the parental pairs of the qualities he desires, and his hopes are seldom disappointed. He repeats the process until he arrives at the highest perfection in view that is attainable; hence our fleet race horses, our strong draught horses; and also our finest breeds of cattle and sheep, selected with a view to their qualities for milking, clip of wool, or beef, or mutton. Thus the wild animals are inestimably improved! And so with these and other purposes, and the large indulgence of a capricious fancy, have pigeons, poultry and dogs been improved, or greatly changed in their varieties, until it is made a question whether such variations have not been carried to the length of making new species. The success of such proceeding has been made the basis of a theory so extreme, that it at once threatens to destroy the classifications of science, and the religious faiths of mankind.

It is, indeed, also true, that the like inheritable qualities exist in the

human species, and if men and women were as careful in mating, as men are when breeding their horses, cattle, sheep and pigs, to consider whether those they select are well endowed with bodily and mental perfections, the physical and moral qualities of families might also be alike improved; though the unattractive among mankind would still not be disappointed in the opportunity of mating, if they have the means of livelihood or the ability to win it; the want of which constitutes the most serious check to matrimony and the increase of population. But mankind are neither so careful in selecting what shall be the qualities of the father or mother of their children, as farmers are of the pedigree of their stock; nor are men or women so careful of their own training and feeding, and the preservation of their health and beauty by temperance and exercise, so that they are more derelict in duty to themselves than to their animals, and the race has not been improved as it should have been. Yet, it may well be questioned whether the human race is improved in the aggregate by sexual selection, since generally men and women do marry, and since the women who fail to marry from the absence of personal attraction, are probably outnumbered by those whose personal attractions, combined with their moral weakness, causes them to become the victims of "the social evil," of which sterility is one of the retributions. Yet the race, is undergoing a constant physical and moral improvement; but it proceeds from Christian civilization; a civilization that does believe in an ever-living watchful Creator, and that would suffer terrible relapse, if that belief were lost. This is said on the proof of boundless facts.

If we consider the conditions of all life as found in nature, before man began to reduce it to his dominion, and the methods of his procedure and its results, just as the evolutionists have described, we shall be able to value their scientific significance, and to test the truth of the theory raised upon the narrated facts. Darwin in selecting his illustrations says, as to dogs and their various breeds, "that some small part of the difference is due to their having descended from distinct species;" "In regard to sheep and goats I can form no decided opinion." The humped Indian cattle have a different origin from the European cattle, which are supposed "to have had two or three wild progenitors." With respect to horses he says, "I am doubtfully inclined to believe, in opposition to several authors, that all the races belong to the same species." As to fowls, "it appears to me almost certain that all are descendants of the wild Indian fowl." As to ducks and rabbits, "the evidence is clear that they are all descended from the common wild duck and rabbit." "Great as the differences are between the breeds of pigeons, I am fully convinced that the common opinion of naturalists is correct, namely, that all are descended from the rock pigeons."—Darwin on Origin of Species, p. 30 to 35. Now what is the import of this? First, that by nature, or the Cause of nature, when or wherever man has not interfered to modify, the demarcations of species have been well and persistently defined. Through all the geological ages and downward to the time present, the operations of nature, when let alone were and are simple and true, without tendency to variations, or

acting under a power that ever corrected them. The wild progenitors were without variations; in that state new species were not formed by process of variations; nor was there transition by gradual change from a lower to higher species; nor do geology and history afford the proof of such change, and the theory depends upon conjecture asserted against the truth of our observations and just inferences, that nature has always operated as we see her now do in those vast domains of ocean, mountain and forest, that lie beyond the interference of man. With the living life of the oceans man can do nothing except slightly to diminish the numbers of whales and fishes, and there the processes of nature go on without change; and so has it ever been in the deep recesses of forest and mountains yet unpenetrated by man, or, if the scientific adventurer has penetrated, it has been to leave no trace of his power there. It has been man only that has disturbed the truthful proceedings of nature; modified them for his own benefit.

Again, it is to be considered that all that man has done, he must forever continue to do, otherwise nature will re-assert her dominion, and undo all that man had done to mar, or pervert, or perfect her works; and she will restore them to their pristine simplicity. This we know she is always doing, from abundant observations; she makes hybrids unfruitful; her ban forbids changes that shall endure; the seedsman and gardener ever watch their choice crops, fruits, vegetables and esculents, and must do so, for they know well that nature ever resumes the attempt to "cry back;" that is, to return to that condition from which the skill of man has forced her to meet his own wants, or to please his fancy. Who can reasonably doubt that if man was to cease to be on the earth that his seeds, and esculents, fruits, and all domesticated animals would in process of time, return to their natural conditions? Human care and culture and provisions ceasing, the antecedent causes of nature would again come into exclusive operation; and by her own truthful observance of cause and effect, the ancient condition of vegetable and animal life would be restored as they were on the face of the earth. Without his stores of provision and provender and shelter, a single severe winter would cut his before housed and sheltered vegetables and animals, by frost or starvation; down to about the thirty-seventh degree of latitude; and half the variations that have grown up under the training hand of man might perish at a blow. What man has achieved over living nature may, therefore, be considered as an artificial work of but temporary endurance. Darwin fully admits this when he says, "Natural selection is a power incessantly ready for action, and is as immeasurably superior to man's feeble efforts as the works of nature are superior to art." *Ib.* p. 70. When let alone she elects to return to her original conditions.

Of the variation produced by selection in breeding and the better care of animals, Darwin says, "the key is man's power of accumulative selection: Nature gives successive variations; man adds them up in certain directions useful to him. In this sense he may be said to have made for himself useful breeds." *Origin of Species*, 40. But what does nature do

when man does not seize upon the offered variations to make them inheritable, by bringing together two of different sexes with the like variations to become parents of a common like progeny, and afterwards preserving only those which most strongly shew the desired variation? The variation from one parent only would quickly fade out into the normal character. Those having variations, Darwin says, "would during the first and succeeding generations cross with the ordinary form, and then they would almost inevitably lose their abnormal character." Ib. 53. Nature, of herself, does not interpose to seize upon and continue the occasionally occurring variation. She does not select a mate of like variation; nor does she develop it to a higher perfection by training or better feeding, and make it the special centre of a favored propagation. Natural selection, unaided by man, must, therefore be of very limited influence, if any, towards establishing a change, whether to be called a variation or a species; while the change that is wrought by man, would, without his continuing maintenance, revert to its normal condition much more rapidly than it was formed. Again variations left only to nature's care, must be such as give increase of strength, otherwise they will die out from weakness as all monsters do, or breed out to the normal condition. Ib. 90, 108. The varieties of pigeons have been the products of man's care for thousands of years; but not one-half the eggs of the best short-beaked tumbler-pigeons would be hatched without his aid to break the shell. Ib. 38, 90. This shews them degenerate; a pampered and failing aristocracy; who, left to themselves, in a state of nature, would quickly die out.

And what is the result of the selection of nature even when most assisted by man? Has it produced any new species? For more than three thousand years before Christ, and ever since, there have been pigeon fanciers who have taken infinite pains in their breeding. Ib. 38. Darwin says, "the diversity of the breeds is something astonishing." "A score of pigeons might be chosen, which, if shown to an ornithologist, and he were told they were wild birds, would certainly be ranked by him as well defined species." Ib. 34. Yet are they such? Darwin says, "the hybrids or mongrels from all the domestic breeds of pigeons are perfectly fertile. I can state this from my own observations, purposely made, on the most distinct breeds. Now it is difficult, perhaps impossible, to bring forward one case of the hybrid offspring of two animals *clearly distinct*, being themselves perfectly fertile," p. 37. Now, if there were a possibility for nature and man together to create new species, it should have been in the instance of the long and general experiment with pigeons. It has at most amounted to producing varieties, in shape and exterior plumage and appearances, while by the truest test of inter-breeding the nature of the creature is essentially unchanged. It is probable that the truth is the same as to dogs, horses, European cattle and fowls, except as disparity in size has rendered the same test of inter-generation to a large extent, impracticable. Surely, then, that law which the Creator has so emphatically imposed upon His creation, He has not himself vio-

lated, in carrying on all His living creation from simple to higher forms through infinite processes of generation. He who has forbidden the confounding of nearly allied species, cannot be taken to have carried on the processes of generation, in violation of the ban against the confusion of species, and in disregard of all the classifications science has adopted from the study of creation, only the better to describe and understand that creation. On the contrary, it is to be taken that generation has no part in the work of creation ; but has only her assigned duty, under regulative laws, to propagate creatures of the same species, of two sexes, to reproduce a progeny like unto themselves. All that we can see and know of creation brings us to such conclusion. To create is one thing, and to propagate in the parental likeness another. The propagator but fulfills an assigned instinct that is essentially imperative, except as man is self-restrained by over-ruling moral considerations. His function is a very limited one. The inception of new life, its gestation and growth, and the measure of that growth are the work of that Higher Life or Being, that is, the Giver of all life, as we must logically infer ; for every effect must have its adequate Cause.

The great distinctions of classes, orders, genera and species, as the proofs stand in geology, history, monuments and living nature, have ever remained unchanged and unobliterated ; while variations within species, have been permitted for obviously good uses to man. The mules that he breeds do him good service, but mules are not permitted to breed mules. A theory that would permit a varying generation to thwart this grand order of life, and that would traverse all these classes, orders, genera and species by violations of the ban we know to forbid hybrids to breed, we may simply set down as contrary to nature and impossible, and such theory demands the clearest and most indubitable proofs, none of which have been adduced.

The theory is wholly illogical and inherently inconsistent with itself. The whole drift of the theory is to make generation build up all created life, with one or a few exceptions, without a Creator. But why any exception? Only that there shall be a starting point in life ; that there shall be an incipient generator in this mighty process. But this earliest life must have had a Creator, and the capacity to generate life through all kinds must have come from a Creator ; yet this theory demands none, at the beginning, or in any stage of progression, but it obviously proceeds upon the ground that generation will suffice for all life, and that life needs no Creator. Yet there is an overruling power, without which generation could not proceed, without whom there would be no ban against confusion, and without whom the required difference of sex would not come into being in the requisite proportion. The reasonable inference to be made is, that as a Creator was required for the first life demanded by the Darwinian theory, and for all its processes of generation, and the after preservation of all creatures born, the same Creator would himself create all the creatures that share his protection, in all their various species, and do so as the world was prepared for them, and was of the

temperature and had the food they required. The first creatures had a delegated power of generation; but nothing in nature has shown that they had a mission to carry on creation to higher levels either of physical structure, or moral excellence, or of intellectual power.

The whole theory is built upon chance variations from the normal course of nature, occurring at very long intervals of time. It is, therefore, presumably, not the method by which the Creator has built up creation, from one or a few of simplest forms of life, into all the elaborate classification in which we now behold it. Thus, Darwin says, "Natural selection acts only by taking advantage of slight successive variations; she can never take a sudden leap, but must advance by short and sure, though slow, steps." *Ib.* 190. "New variations are very slowly formed, for variation is a slow process, and natural selection can do nothing until individual differences or variations occur, and until a place in the natural polity of the country can be better filled by some modification of some one or more of its inhabitants." *Ib.* 171. We have seen that the help that man can give to promote such variations is very limited, and that what he effects would soon relapse without his continuing maintenance, and remain but a variety, and result in no new species; what else but nature, then, when man is not co-operating, is to "take advantage of the slight successive variations?" And what does she do? If but one parent has the variation it will very soon run out in the generative process. This Mr. Darwin readily admits, and candidly stands corrected by the *North British Review*, while monster variations seldom live any length of time. *Ib.* 93. Thus the aberrations of nature are so few and far between, and so soon to disappear, as to afford no adequate ground for the change of any species, much less suffice to produce all the classes, orders, genera, and species, into which science has arranged all living things, from one or a few primary simple types. Nature is, indeed, slow to make enduring changes, but quick to correct her errors. If jostled in her processes, she does not make the imperfect product the basis of her further work to enlarge and perfect her systems of life, that all provided food should have its fitting consumers. Nature is ever truthful and casts aside all her products that have been marred upon her wheel, and uses most those which come most perfect from her hand, and thus her progress is ever steady, or is improvement towards her best standard of each created species, under favoring circumstances; but is degradation where unfavorable, or man violates the law of his well-being. This is confidently said after such general survey as all who are intelligent may make,—all who will lift up their eyes and behold the operations of all living creation, or read the geological records,—not looking too constantly downward with limited vision as wedded to pre-conceived theory.

Darwin admits the dearth of facts to sustain his theory, and enters into explanations why they are not found. He says: "To sum up, I believe that species come to be tolerably well-defined objects, and do not at any one period present an inextricable chaos of varying and intermediate links; first, because new varieties are very slowly formed, for variation is

a slow process, and natural selection can do nothing until favorable individual differences or variations occur." *Ib.* 171. But if all the classes, orders and species come from one or two original and simple forms of life, there should be everywhere and constantly found intermediate transition links, at different stages of progress towards the new species, and presenting an inextricable chaos. This result is parried by the argument that the process is so slow that it is not seen. The more obvious conclusion would seem to be that this transitional process, or "inextricable chaos," are not seen because never happening. And Darwin candidly states (*Ib.* 173), "Here, as on other occasions, I lie under a heavy disadvantage, for, out of the many striking cases which I have collected, I can give only one or two instances of transitional habits and structures in closely allied species of the same genus, and diversified habits, either constant or occasional, in the same species. And it seems to me that nothing less than a long list of such cases is sufficient to lessen the difficulty in any particular case like the last." The difficulty was to conceive how an insectivorous quadruped could possibly have been converted into a flying bat. But it should seem this would occasion small difficulty to a theorist who could believe that bats and elephants and man himself, sprang from an ascidian, a radiate, or trilobite, or some other early simple form of life. He, in such case, becomes too carefully scrupulous for his own theory; and he further conscientiously says (p. 198), "we have seen in this chapter how cautious we should be in concluding that the most different habits of life could not graduate into each other; that a bat for instance, could not have been formed by natural selection from an animal which could only glide through the air." Let us observe his wise caution, and doing so we must reject his theory. He gives no proofs that justify his conclusions.

Again, Mr. Darwin is constrained to excuse geology for affording his theory but little support. Too few fossil specimens have been obtained; too many creatures have perished and left no likeness in the rocks. He says, "although geological research has undoubtedly revealed the former existence of many links, bringing numerous forms of life much closer together, it does not yield the infinitely many fine gradations between past and present species required on the theory; and this is the most obvious of the many objections which may be urged against it." *Ib.* 415. But he does not adequately answer this seemingly well founded objection. He excuses himself by the paucity of facts. Then it may be asked why has the theory been propounded before adequate facts have been gathered? Philosophy reserves the privilege of reprimanding her votaries who built their theories upon insufficient facts; and truth compels her to censure unsparingly. They are not permitted to indulge the ambition of theorizing before they have collected adequate materials for their edifice. Darwin has ranged widely and observantly the realms of nature, and we follow him interestedly; but he seems at fault in making his inductions from the facts he has learned; has built on an inadequate foundation; has made small things important, and overlooked the full

import of the great. If his theory were true, the facts for its support should exist by millions, and by billions. That his researches have not produced the facts he wanted, makes them tell more strongly against him. If all living life, and all that has been, came from first simple forms by slow changes, through all being up to the classes, orders, genera and species that we find in existence, and to have existed through all the geological eras, then intermediate links should have been endlessly abundant, and if but a hundredth part of the fossil kinds had been exhumed, they should necessarily have revealed the wanted evidence; living nature should also have abounded in ample testimony, by endless and inextricable confusion. To reach existing results, the process of change being gradual, the transition creatures should have teemed in myriad forms, other than is now seen in fossil or in life.

But why, if there was such immensity of transition as to account for the astounding changes wrought; why, if such endless variations were started in nature casually, or by chance, without reason or motive; how came nature to act so wisely as to bring order out of confusion and chaos, and on that order to take her stand more firmly than the mountains? In the transitional steps towards all the forms that have existed, of every shape and size from the little Rhizopod, Ascidian, Trilobite or Radiate, at the bottom of the ocean, up to the whale, mastodon and man, during an assumed necessary unimaginable length of time; how was all life so marshaled and placed as science now finds and arranges it, and finds it ever resistant of all change? Intelligence and will, even then, must have governed the proceeding and guided its purpose so that all should live and not work confusion. That Intelligence that could do so much in ruling nature, and could create the earliest life, surely could proceed more directly and without disorder, to create the kinds and species for whom that same Intelligence had provided the land, air, water and food, upon, in and by which they should all live, in congenial habitation. But Darwin never recognizes that Being as essential to his theory: No! the theory makes nature herself a substitute for God. Her forces it was, that from time to time jostled all creatures into slight variations, and then she herself selected the best chance-products of a capricious generation and continued them, and perfected without intending to perfect them, and the life of the weak and monstrous was extinguished, merely because not fittest to survive. If nature has such power over us and ours, and all living, shall we not impersonate and worship her as our deity? Men did do this, in various forms, but it was before science and revelation had dethroned the heathen deities. They are not likely to be restored to the worship of mankind, and thoughtful men generally believe in one supreme God.

And why has there been any limit to classes, orders, genera and species? And why has the growth of each and all creatures had their normal limit? Certainly by some intelligent Power that ruled over what are called the forces of nature. Why cannot the naturalist more frequently elevate his views to recognize an Intelligence, without whom all that he studies, himself included, can have little significance, or philosophy any worthy or

consistent foundation? God's order is the source of all science and philosophy. But Darwin neither acknowledges nor denies the ruling of the Deity; he invokes not His aid in the processes of nature; nor yet does he deify nature, but says this of her: "It is difficult to avoid personifying the word nature; but I mean by nature, only the aggregate action and product of many laws, and by laws the sequence of events as ascertained by us." It is obvious that the effect of the theory is displacement of God from His works and from the mind of the naturalist. But the laws of nature could not exist without nature had a Creator, and law a Law Maker. Darwin admits that the "highest intellects that have ever lived," have believed "there exists a Creator and Ruler," but his theory makes no account of Him. He would make nature Godless.

While Darwin's theory undertakes to rise from a few simple first forms of life to higher and more complicated, he denies any purpose of a designer to perfect his works, or any general tendency in nature to do so. He says, "whatever may be thought of this view, in none of the foregoing cases do the facts, as far as I can judge, afford any evidence of the existence of an innate tendency towards perfectibility or progressive development." *Ib.* 132. The variations spring from individuals; but from what cause or with what purpose is not explained. The mass of the species remained unchanged, and so live on through many geological periods. He says, "Geology tells us that some of the lowest forms, as the infusoria and rizopods have remained for an enormous period in nearly their present state." *Ib.* p. 123. "I believe that many lowly organized forms now exist throughout the world, from various causes. In some cases, variations or individual differences of a favorable nature may never have arisen for natural selection to act on and accumulate. In no case, probably, has time sufficed for the utmost possible amount of development. In some few cases there has been what we must call retrogression of organization." p. 124. All, therefore, has come from chance individual variations. Thus all higher life, man included, has been lifted up, by chance-coming variations, generated in the lowest and lower forms of animal life, without purpose, design, or Designer: though the result is the exalted being man!

I make this statement with due care: He says, as to the mode of transition, "there is no reason to doubt that the swim-bladder has been converted into lungs, or an organ used exclusively for respiration. According to this view it may be inferred that all vertebrate animals with true lungs have descended by ordinary generation from an ancient and unknown prototype, which was furnished with a floating apparatus or swim-bladder." *Ib.* 183. This does not except the vertebrate man. He insists upon placing man in the order *Quadrumana*; says, "If man had not been his own classifier, he would never have thought of founding a separate order for his own reception." 1 *Descent of Man*, 183. He further says, "we will now look to man as he exists; and we shall, I think, be able partially to restore during successive periods, but not in due order of time, the structure of our early progenitors. This can be effected by means of the rudiments which man still retains, by the characters which occasionally

make their appearance in him, through reversion, and by the aid of the principles of morphology and embryology. The early progenitors of man were no doubt once covered with hair, both sexes having beards; their ears were pointed and capable of movement, and their bodies were provided with a tail, having the proper muscles. Their limbs and bodies were also acted on by many muscles which now only occasionally re-appear, but are normally present in the quadrumana." * * "The foot, judging from the condition of the great toe in the fœtus, was then prehensile; and our progenitors, no doubt, were Arboreal in their habits, frequenting some warm forest clad land. The males were provided with great canine teeth, which served them as formidable weapons." *Ib.* 198. "In a series of forms graduating insensibly from some ape-like creature to man as he now exists, it would be impossible to fix on any definite point when the term 'man' ought to be used." *Ib.* 226. That is, when he ceased to be monkey and became man, by physical transformation. Mr. Darwin has not attempted to show us in geology, in history or in life, a man at the point of transition, or to imagine or describe what he could be, or what the essentials to the change; nor any creature yet in the process of transformation.

Thus, it is distinctly avowed that man was the result of this theory of evolution, and that his ancestor was an ape; whose ultimate progenitor was some trivial form of life in the bottom of the ocean. Thus by chance-begotten variations in the process of generation, all the million forms of life, in all their infinite distinctions, have been formed. Thus, through an instinct which no creature but man ever controls or disobeys, all living life has been built up; nay, all created creatures were created, except some first simple form, which alone it has been necessary for this theory to invoke, that there might be an inceptive speck of life for the beginning of a process of variable generations. But who gave this power to the first life and all later life to propagate such variable generations? Who created the sexes and the organs of generations? Who prepared the germs of life in one sex to be called into being by the other? Who gave the instinctive desire that starts gestation, and made the progeny to share the likeness and qualities of both parents? Who gave the parental instinct of protection of offspring, and who the requisite intelligence for their nurture? It is left fairly to be inferred that a Creator could only make the first simple form, and not the later higher life; or that life first came and worked on spontaneously. How could the creature of inferior instinct by generation create that which evinces the intelligence of the bee, the ant, the beaver and the elephant? The skill and polity of the bee, that made the ancients ascribe to her a spark of the Divine intelligence? Mere physical changes could not account for all these, and yet less for the mind of man. The Intelligence of instinct, and of mind, are not conceivably the product of matter, spontaneously or generatively, but we must ascribe such endowment to Him who could make the ant wiser than the human sluggard, who forfeits his manhood and dignity; to a Being infinitely superior in intelligence than

the highest intellect. If God did not create all creatures and endow them with the law of their being, why should He have cared for them as we perceive throughout all nature? He who ascribes nothing to God does not answer the question. The questions which our reason inevitably asks give him no trouble. He is tempted to deify nature but owns no Deity.

There are, indeed, common necessities to all life, that would go further to indicate its unity than the "rudiments" searched out. All must live upon the food that the earth, sea and air supply. All must have power of digestion and assimilation, and mostly have hearts, circulations, viscera, tissues, nerves and brains. The vertebrates have also flesh and bones. Now, in all this, there is a greater basis of brotherhood in all animated nature, than in the few small matters upon which the theory in question is built. That life in embryo shall start similarly, is as much to be expected as that the digestion, circulation, secretions and excretions should go on alike. But whatever be the incipient or embryonic resemblance, the mature development is always truthful to the demarcations recognized by the classifications of science. All that have nerves to feel are objects of kindness; but there fraternity ends.

Now, what are the particular things enumerated that declare our ancestors to have been apes? Here is the inventory of them in the author's words: "Some few persons have the power of contracting the superficial muscles on their scalps:" 1 Descent of Man, 19. "One little peculiarity in the external ear:" It is "a little blunt point projecting from the inwardly-folded margin or helix," p. 21. "The nictitating membrane, or third eyelid:" which in man "exists, as is admitted by all anatomists, as a mere rudiment, called the semilunar fold," p. 22-3. Of the sense of smell in man, Darwin says: "No doubt he inherits the power in an enfeebled, and so far rudimentary condition, from some early progenitor, to whom it was highly serviceable and by whom it was continually used," p. 23. "Man differs conspicuously from all the other Primates in being almost naked: but a few short straggling hairs are found over the greater part of the body in the male sex, and fine down on that of the female sex." * * "There can be little doubt that the hairs thus scattered over the body are the rudiments of the uniform hairy coat of the lower animals." p. 24. And he says, "we must consider the woolly covering of the fœtus to be the rudimentary representative of the first permanent coat of hair in those mammals which are born hairy." p. 25. "It appears as if the posterior molar or wisdom-teeth were tending to become rudimentary in the more civilized races of man." p. 25. "With respect to the alimentary canal, I have met with an account of only a single rudiment, namely the vermiform appendage of the cœcum." p. 26. The foramen near the lower end of the humerus is said to be found in one per cent. of modern human skeletons, but much oftener anciently, "one chief cause seems to be that ancient races stand somewhat nearer than modern races in the long line of descent to their remote animal-like progenitors," p. 27-28. "The *Os coccyæ* in man, though functionless as a

tail, plainly represents this part in other vertebrate animals." p. 28. "It is well known that in the males of all mammals, including man, rudimentary mammæ exist." p. 30, which Mr. Darwin finds it "difficult to explain on the belief of the separate creation of each species." Darwin concludes this enumeration by saying, "The homological construction of the whole frame in the members of the same class is intelligible, if we admit their descent from a common progenitor, together with their subsequent adaptation to diversified conditions. On any other view, the similarity of pattern between the hand of a man or monkey, the foot of a horse, the flipper of a seal, the wing of a bat, etc., is utterly inexplicable." p. 31. And this conclusion may be admitted, if we believe creation had no Creator. But if all creatures had a Creator who endowed them with power to generate their like, but forbade them to generate their unlike, the explanation is clear, and makes that of Mr. Darwin wholly illogical. Was structure so great ever raised on so narrow a foundation! Indeed, this small basis for so tremendous a theory, necessarily brings into question the author's logical powers, and causes thoughtful men to set down much to personal idiosyncrasy.

These rudimentary signs of man's relationship to the beast are of small things, indeed, but according to Darwin, of mighty significance: but to common apprehension of less account than the general functions common to mammal life, and the approximation of form between the ape and man; yet, all considered, leaving one a beast and the other an immortal being.

Is it not competent for the Creator to employ similar physical structures and functions in animals, and to give to all the benefits of adaptation to the food they are designed to feed upon, the situations they are to occupy, and the life they are intended to live, without making the one the offspring of the other? He who intended the good of all, would give the good in all to every species, so far as adapted to the welfare of each, and this we can more logically believe than that the man, the monkey, the horse, the seal, bat, &c., have blood relationship through a common ancestor. It is not a welcome belief that whether we eat "fish, flesh or fowl," we are perpetrating a kind of cannibalism, by feeding on distant relatives, though the degree of relationship cannot be traced, even with the help of Mr. Darwin.

And can science dispense with a Creator? The votaries of science may grope through special investigations until they cease to see God in His works. But just so far as they cease to see God as the author of Nature, they seem to cease to understand the logic of creation, in its pervasive features, wisdom and magnificence. Yet this theory of a generated creation, if it could be believed to be true or logical, must still be taken to rest upon a Creator and an upholder of all nature, and of the Universe, while it will not own Him as Author of all kinds of life. But life could not be, nor generation, nor birth, nor growth without His instant sustentation. And shall He not create His creation with all the distinctions of class, order, genera and species as we behold it? He must have created this earth, the sun that warms it, the air, water and food by which all life

must live ; and He must have adapted all life to these conditions of nature in which it is placed. He who would deny the Creator in any part of His works must be prepared to do so as to the whole. Whatever be the purpose of the theory its tendency is to teach men not to believe in God or their own souls.

The reader will, if he yield his belief in any degree, reason thus, and say, if I sprang from an almost senseless piece of pristine life ; if after my ancestors had arrived to the stage of evolution next preceding man, they were no more than monkeys ; then, as I believe, these had no immortal souls so have I not an immortal soul : If I only differ from them by reason of a more perfect physical development, that of itself could give me no claim to an immortal soul. If I sprang from the beast I must die the death of the beast ! And this idea would be strengthened by the supposed possibility of a reversal of the process of evolution, under the suspicion of which I would be brought ; for Darwin admits that although the ancestral rudiments have become wholly suppressed for want of use, "they are nevertheless liable to occasional reappearance through reversion ; and this is a circumstance well worthy of attention." *Ib.* 18. So, indeed, it appears if man be not yet sure of remaining man ; if he may relapse to the ape, or become a new variety and be on the road to become a new species, let those look to the possible consequences who have an extra finger or toe, or whose canines or last molars, or slightly pointed ears, show kindred with the ape or donkey. If their descendants should cease to be man, can they in law inherit a man's estate ? If there was such a transition upwards there may as likely be downwards. Who can tell what may be the freaks of nature, if nature be not in the keeping of God ?

Mr. Darwin, writing in support of his theory does not show the facts that oppose that theory. He does not show the great differences that exist between the species that he would approximate. This is so both when speaking of the physical structure and the mental powers. When he passes to the admitted great mental and moral disparity between even the savage man and the most intelligent of the inferior animals, he advocates the cause of the latter, by stating what they do with their delegated power of instinct, and that they also exhibit instances of a glimmering reason. He, however, makes no near approximation, and admits the difference to be enormous though the comparison be made with the lowest savage. *Ib.* 33, 67. The theory is really based but upon the physical structure, otherwise the ape would not have been selected as the progenitor of man, but rather the bee or ant, the beaver, dog or elephant, who are far more sagacious than the monkey.

What do we now behold over the face of the earth ? Everywhere there yet abound the animals through which man is imagined to have descended, without having suffered variation or change, though exposed to the like causes supposed to have wrought their fellows into man ; and everywhere men, savage or civilized, have been dispersed over the earth, and have so been without any evidence of material physical change, throughout all

the ages of their existence. Surely, to do away with this great fact, and the further fact that all is now proceeding as it did from the dawn of history, written or monumental, we must, in the absence of all other facts, except speculative inferences from very small things, called *rudiments*, conclude that God made man in the image he now bears, physical and mental, except as man has educated himself, as no other creature was ever endowed with the capacity of doing. The great lines of demarcation between the animal that has always followed only his assigned instinct, and the higher being that has always had power to invent and make the forces of nature, and all other animals subservient to his uses,—to invent language, writing, printing, and to indefinitely accumulate knowledge and perfect his own character,—have always existed over the earth, side by side, utterly incapable of fusion, and in extreme contrast, in their most marked characteristics. When we study by the microscope we are not to disregard the great things beheld by the unaided vision. If we see the mote, we must see the beam also.

So far I have but quoted from Darwin in relation to the theory of evolution. His simplicity and candor made it easy to answer him by his own books. A writer in the *British Quarterly*, for October, 1871, appears to have been assisted by microscopic observations, and says: "Almost every tissue of the newt, frog, toad, and green tree-frog, has individual characteristics of its own, which could be distinguished by one who was thoroughly familiar with the microscopic characters of the texture." "The nerve fibres in every part of the body of the newt, differ in many minute particulars from those of the frog." "In these animals not only do corresponding tissues exhibit peculiarities, but entire organs are totally different." And he points out the differences. "Again, if we take the skin of the four animals mentioned above, although it will be seen that there is a certain general agreement in structure to be recognized, there is not a texture of the skin that is alike in them all," and the differences are pointed out, with the assertion that "these seem to increase in number the more thoroughly and the more minutely the tissues are explored." P. 248-9. If this closer test shall continue to be applied, it probably may yet be believed that "All flesh is not the same flesh; but there if one kind of flesh of men, another flesh of beasts, another of fishes, and another of birds," and that men may safely eat all the others.

Professor Wyville Thomson, in a late lecture in the University of Edinburgh, said: "During the whole period of recorded human observation, not one single instance of the change of one species into another has been detected, and, singular to say, in successive geological formations, although new species are constantly appearing, and there is abundant evidence of progressive change, no single case has as yet been observed of one species passing through a series of inappreciable modifications into another." "*Nature*," November, 9th, 1871.

And here I would ask to read the forcible statement of our Secretary, Mr. Lesley, who adds his authority and force of logic to that of many eminent naturalists, and, I believe, nearly all the members of this Society

against the Darwinian theory: "If there has been a Darwinian development of animal life upon the planet, then it looks as if it had been carried out along four lines rather than one. Four stand-points of creative energy must have been assumed; four startings out of life must be accounted for; four mysteries, four miracles, four beginnings of creation, to be developed instead of one! But where all is mystery and miracle, additions are hardly noticeable. It becomes Mr. Darwin's business, then, not only to suggest some plausible, rational mode by which one species could gradually or suddenly pass the short interval which separates it from another; his explanation must suffice to bridge the awful chasms which have always kept these four great plans of structure separate, along the lines of their development. He must show us how an animal of radial growth could be developed into one of linear growth. Nay, he must fill up the immense interval between the plant and the animal; and, finally, the chasm between the atom of carbon or hydrogen, and the nucleated cell of albumen or fibrin. He must explain the genius of life itself, before he can make his law of natural selection stand for anything more than a beautifully worded description of the ills that all flesh falls heir to when it is born upon this planet. *How* it is born upon the planet is another matter, and remains unexplained by his hypothesis. We do not get rid of miracles by chasing them back along the ages to the starting point, and concentrating them there. A line of battle is not necessarily vanquished and annihilated when it is rolled up by an attack upon its flank, when there is a reserved force at the other end." "Man's Origin and Destiny," p. 78.

There is, however, one sufficing explanation of the mystery and miracle of life—it is this: that there is a God, and that man has an immortal soul; that this life is but the beginning of an endless being. The good fruits of this faith is an argument of its truth; and man has consciously the sense within him that the life eternal awaits him; and he already here communes with Deity. Such a life and such a soul must have had a Creator infinitely superior to the being created.

It is a decisive objection to the theory of Darwin that it takes account only of physical structure, while the greater disparity between man and all other animate creatures consists in his high moral, intellectual, and religious nature. Lyell cites, to sanction Quatrefages in saying, "that man must form a kingdom by himself, if once we permit his moral and intellectual endowments to have their due weight in classification." "Antiquity of Man," p. 495. "It is by something completely foreign to the mere animal, and belonging exclusively to man, that we must establish a separate kingdom for him," p. 494. Lyell also quotes to adopt the Archbishop of Canterbury, Dr. Sumner, in saying, that the comparison should not be taken from the upright form, nor even from the vague term reason," "but from that power of progressive and improvable reason which is man's peculiar endowment." "Animals are born what they are intended to remain. Nature has bestowed upon them a certain rank, and limited the extent of their capacity by an impassable decree. Man, she-

has empowered and obliged to become the artificer of his own rank in the scale of beings by the improvable gift of improvable reason."—Ib. 496-7. And Lyell himself says, p. 498, "We cannot imagine this world to be a place of trial and discipline for any of the inferior animals, nor can any of them derive comfort and happiness from faith in a hereafter. To man alone is given this belief, so consonant to his reason, and so congenial to the religious sentiments implanted by nature in his soul; a doctrine which tends to raise him morally and intellectually in the scale of being, and the fruits of which are, therefore, most opposite in character to those which grow out of error and delusion."

The tendencies of the Authors now reviewed is the most unfriendly to that religious faith on which human welfare essentially depends; yet it is believed that good will result from the divulgence of their theories; but it will be because of their failure; because they will have compelled men to re-examine their faith upon the platform of Science, and thereby confirm their religion received by revelation. They will find in all truth an accord showing its source one; and in the constancy of nature the truthfulness of God. They will find that He who created ever rules His creation and compels it to obey His ordination. They will find that only man was made in likeness unto God, and that he was made to have dominion over all other living creatures. They will perceive that Science can erect no barrier between man and his immortal hopes; that the being of an immortal soul stands elevated above all other animated beings by a distinction that makes him but "a little lower than the angels," and a child of his "Father in Heaven"; a Father who condescends to commune with and be known of His children.

Stated Meeting, January 19, 1872.

Present 20 members.

Vice-President Mr. FRALEY in the chair.

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